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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,520	08/13/2001	Ryota Kato	108072.01	6869
25944	7590	06/14/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			PHAM, HAI CHI	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,520

Applicant(s)

KATO, RYOTA

Examiner

Hai C. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☒ Certified copies of the priority documents have been received in Application No. 09/758,144.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08/13/01</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I in the reply filed on 06/01/05 is acknowledged. The traversal is on the grounds that the subject matter of all species is sufficiently related and that there is at least claim 12 (instead of claim 8) being generic to both Species. This is found persuasive and the requirement for election/restriction is herein withdrawn.

Claim Objections

2. Claim 4 is objected to because of the following informalities:
- Claim 4 should claim dependency from claim 3 (instead of from claim 2) since it recites a limitation, e.g., "a fist lens" found in claim 3.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 5-8, 10 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishibe (U.S. 6,317,244).

With regard to claims 5-7, Ishibe discloses a laser beam scanner for scanning a plurality of laser beams in a main scanning direction, the scanner comprising a plurality of laser light sources (the light source can be a monolithic 2-beam laser, each of which emits a laser beam as shown in Figs. 7 and 12), a deflector (polygon mirror 5) that deflects the laser beam emitted from each of the plurality of laser light sources, a first converging unit (scanning lens 6) that converges, at least in the main scanning direction, the laser beam deflected by the deflector, a photosensitive member (photosensitive drum 7) across which the laser beam converged by the first converging unit is scanned, a detector (BD sensor 11) that receives and detects the laser beam converged by the first converging unit to provide scan start timing of the laser beam, a second converging unit (optical system 12) that converges the laser beam emitted from each of the plurality of laser light sources onto the deflector, a slit member (slit 9) disposed on a position optically equal to a scanned position of the photosensitive member (col. 6, lines 58-59), and a third converging unit (BD lens 10) between the slit

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member and the detector that converges, at least in the sub-scanning direction, the laser beam converged by the first converging unit, on the detector, wherein a lateral magnification in the sub-scanning direction in an optical path from the slit to the detector is less than one, wherein the lateral magnification is represented by $L2/L1$, where $L1$ is a distance from the slit member to the third converging unit and $L2$ is a distance from the third converging unit to the detector (the BD lens 10 being disposed closer to the slit than to the BD sensor 11) (Fig. 9). Ishibe further teaches a mirror (BD mirror 8) being disposed between the first converging unit (6) and the photosensitive member (7) so as to reflect each laser beam to the slit (9).

With regard to claims 8, 10 and 12-14, Ishibe further teaches a width of the converged plurality of laser beams in the sub-scanning direction on the detector is less than a width of the plurality of laser beams in the sub-scanning direction on the photosensitive member (the width the luminous flux when reflected on the BD mirror 8 being reduced by the size of the BD mirror) (col. 7, line 53 to col. 8, line 3), a slit member (BD slit 9) disposed on a position optically equal to a scanned position of the photosensitive member, wherein the third converging unit (BD lens 10) is between the slit member and the detector (BD sensor 11), wherein the lateral magnification is represented by $L2/L1$, where $L1$ is a distance from the slit member to the third converging unit and $L2$ is a distance from the third converging unit to the detector, and a mirror (BD mirror 8) disposed between the first converging unit (scanning lens 6) and the photosensitive member (drum 7) so as to reflect the plurality of laser beams to the slit member.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibe in view of Ito et al. (U.S. 6,239,828).

Ishibe discloses all the basic limitations of the claimed invention including the first converging unit that converges, in the main scanning direction and in a sub-scanning direction perpendicular to the main scanning direction, the laser beam deflected by the deflector (the scanning lens 6 having different power in the main and sub-scanning directions), but except for the lateral magnification in the sub-scanning direction in an optical path from the deflector to the detector is less than the lateral magnification in the sub-scanning direction in an optical path from the deflector to the photosensitive member.

Ito et al. discloses an image forming apparatus wherein the lateral magnification of the optical system to the photodetector (7) (Fig. 13) is made small by using a condenser lens (70) with a short focal length such that system can be miniaturized.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the lateral magnification of the optical system to the BD sensor in the device of Ishibe smaller than that of the photosensitive drum as taught

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by Ito et al. The motivation for doing so would have been to provide a more compact optical scanning system.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibe in view of Ito et al., as applied to claim 1 above, and further in view of Hama (U.S. 5,621,562).

Ishibe, as modified by Ito et al., discloses all the basic limitations of the claimed invention including the second converging unit in the cylinder lens (4) that converges the light beams in the sub-scanning direction onto the surface of the polygon mirror, but is silent regarding the BD lens as being the same unidirectional converging lens type.

Hama discloses an optical scanning system having a cylindrical lens (12) for converging the emitted light beam in the sub-scanning direction onto the surface of the polygon mirror (14) and a BD lens (cylindrical lens 41) for focusing the deflected light beam in the sub-scanning direction onto the light-receiving surface of the sensor (42) so as to correct a displacement of the light beam in the sub-scanning direction (col. 3, lines 21-24) (col. 4, line 60 to col. 5, line 11).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate a cylindrical-type BD lens in the device of Ishibe as taught by Hama. The motivation for doing so would have been to correct a displacement of the light beam in the sub-scanning direction as suggested by Hama.

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8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibe in view of Ito et al., as applied to claim 1 above, and further in view of Houki (U.S. 4,847,492).

Ishibe, as modified, discloses all the basic limitations of the claimed invention except for the BD mirror being disposed after the first scanning lens.

Houki discloses an optical beam scanner having a set of scanning lenses comprising a first scanning lens (6) and a second scanning lens (the cylinder mirror 11 acting as a reflecting mirror and a cylinder lens) (Figs. 2a-b) (col. 3, lines 45-55), and a BD mirror (9) disposed after the first scanning lens (6), wherein the first scanning lens having converging power in the main scanning direction and the second scanning lens having converging power in the sub-scanning direction.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the BD mirror in the device of Ishibe after the first scanning lens as taught by Houki. The motivation for doing so would have been to provide a more compact optical scanning system. Moreover, it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibe in view of Hama.

Ishibe discloses all the basic limitations of the claimed invention including the second converging unit in the cylinder lens (4) that converges the light beams in the

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sub-scanning direction onto the surface of the polygon mirror, but is silent regarding the BD lens as being the same unidirectional converging lens type.

Hama discloses an optical scanning system having a cylindrical lens (12) for converging the emitted light beam in the sub-scanning direction onto the surface of the polygon mirror (14) and a BD lens (cylindrical lens 41) for focusing the deflected light beam in the sub-scanning direction onto the light-receiving surface of the sensor (42) so as to correct a displacement of the light beam in the sub-scanning direction (col. 3, lines 21-24) (col. 4, line 60 to col. 5, line 11).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate a cylindrical-type BD lens in the device of Ishibe as taught by Hama. The motivation for doing so would have been to correct a displacement of the light beam in the sub-scanning direction as suggested by Hama.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibe in view of Houki.

Ishibe discloses all the basic limitations of the claimed invention except for the BD mirror being disposed after the first scanning lens.

Houki discloses an optical beam scanner having a set of scanning lenses comprising a first scanning lens (6) and a second scanning lens (the cylinder mirror 11 acting as a reflecting mirror and a cylinder lens) (Figs. 2a-b) (col. 3, lines 45-55), and a BD mirror (9) disposed after the first scanning lens (6), wherein the first scanning lens

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having converging power in the main scanning direction and the second scanning lens having converging power in the sub-scanning direction.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the BD mirror in the device of Ishibe after the first scanning lens as taught by Houki. The motivation for doing so would have been to provide a more compact optical scanning system. Moreover, it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM
PRIMARY EXAMINER

June 11, 2005